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YAWS CONTROL IN CEYLON*

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Ceylon is a small island, 25,332 square miles in extent: its greatest length is 270 miles and its greatest width 140 miles. It is situated to the south of India lying between 5° 53′ and 9° 51′ N. and between 70° 42′ and 81° 55′ E. Most of the country is flat, the hilly parts being restricted to a small central area. The annual rainfall ranges from about 20 in. in the dry zone to 150–200 in. in the wet zones. The N.E. monsoon brings the rains during December to February and the S.W. monsoon during May to September. The present population is over 9 million.

In Ceylon venereal disease has been known as "Parangi", and mention of it was made as early as 1548 A.D. in *Yoga Ratnacare*—a book containing the whole of the native system of medicine. John Ribeyro (1640–1685), in his "History of Ceylon", presented to the King of Portugal in 1685, states: "Syphilis, they call 'Parangilede', which means 'Portuguese disease', because it was believed to have been introduced into Ceylon by the African slaves who were brought by the Portuguese in 1505." It was only as late as 1866 or so that "Parangi" was recognized as a health problem, and action was taken to appoint Dr. James Loos, Colonial Surgeon, to study the disease. His report was published in August, 1868. Gavin Milroy, in November, 1876, writing in the *Medical Times and Gazette*, stated that his attention had been drawn to Dr. Loos' report and that he was struck with the resemblance of the disease to cases of yaws seen in Haiti. It was also found during that period that in certain areas, particularly in the area known as the "Vanni" †, almost every inhabitant was affected with the disease.

The first census of "Parangi" in Ceylon, made in 1879 by the Government through village headmen, gave the data shown in Table I.

TABLE I

NUMBER OF CASES OF PARANGI FOUND IN THE FIRST CENSUS, 1879, BY SEX AND RACE IN SEVEN PROVINCES

Province	Total Population	Sex		Race		
		Male	Female	Sinhalese	Tamil	Moorish
Western ..	360	255	105	356	4	—
North-Western ..	711	423	288	670	18	23
Central	573	396	177	549	4	20
North-Central ..	294	167	127	209	29	56
Northern ..	489	279	210	28	442	19
Eastern	1,120	674	446	137	716	267
Southern ..	6,758	4,265	2,493	6,750	—	8
Total Cases ..	10,305	6,459	3,846	8,899	1,213	393

The numbers of cases treated in hospitals during the years 1873 to 1879 were:

Year ..	1873	1874	1875	1876	1877	1878	1879
No. of Cases	4	384	537	1,292	1,099	1,436	1,186

In 1922 the Committee "appointed to inquire into and report upon the prevalence of Parangi in Ceylon with a view to making adequate provision for coping with the disease" (Ceylon Sessional Paper XV of 1922) reported that "the number of cases of Parangi treated at Government dispensaries during the last 5 years was considered, as also the reports from the various Government Agents of the incidence of the disease in each province, and it was found that the incidence was very large, and that the disease was scattered over nearly all the provinces, except portions of the Northern and Western Provinces and in the hilly areas of some provinces" (Table II, opposite).

* Paper read at Inter-Regional Yaws Conference, Bandung (Indonesia), 1961.

† "Vanni" was the name given to Northern Ceylon which is bounded on the North by Jaffna Lake, on the south by the Aruvi river and the district of Nuwara-kalawiya now merged in the North Central Province, on the east by the district of Trincomalee, and on the west by the district of Mannar. Roughly speaking, the district of Vavuniya forms the southern half of the "Vanni" and that of Mullativue the northern half. The area of the Dutch Vanni was computed to be about 2,000 square miles.

TABLE II

NUMBER OF CASES OF PARANGI TREATED IN OUT-DOOR DISPENSARIES DURING THE YEARS 1916–20 IN NINE PROVINCES

Province	1916	1917	1918	1919	1920
Western	621	627	809	939	1,550
Central	1,962	2,205	1,674	1,779	1,766
Northern ..	936	785	897	1,013	899
Eastern	3,863	4,928	5,952	6,771	6,525
Southern	4,177	4,412	4,657	4,497	4,411
North-Western ..	11,566	12,861	12,279	11,269	11,296
North-Central ..	4,964	3,729	3,913	4,568	4,989
Uva	1,671	1,990	1,780	2,509	2,512
Sabaragamuwa ..	806	815	662	838	1,213
Total Cases ..	30,566	32,352	32,623	34,183	35,071

"Itinerating" medical officers visited the areas and treated those suffering from the disease. There is no evidence that latent cases or those incubating the disease were treated. During the late 1930s attempts were made to inspect the villagers by households with the co-operation of village headmen. The reservoir of active infectious cases appears to have been considerably reduced. During the malaria epidemic these medical officers were taken over for malaria control and the work by the itinerating medical officers was handed over to the medical officers of health and field medical officers.

Extent of the Problem

(1) In Surveyed Areas.—In July, 1953, the Superintendent, Anti-Venereal Diseases Campaign, was made responsible for the eradication of yaws from Ceylon. Various spot surveys were carried out in known endemic areas by a W.H.O. expert and local medical officers to ascertain the extent of the problem. A pilot project was carried out in the Battumulla area in Central Province where a clinical and serological survey of the whole population according to household lists was made in 1955. Total mass treatment was the policy adopted. Similar spot surveys were carried out in all areas once considered endemic for yaws (see Table III), and total mass treatment was carried out even where the percentage of active yaws or percentage of serological reactions was low. This was because shortage of personnel and funds made frequent re-surveys impossible.

Table III shows that the incidence of active cases of yaws has become negligible—a few cases were seen at Battumulla and Laggala Pallegama in Central Province, only three of which were infectious. In Anuradhapura thirteen infectious cases were seen. The percentages of sero-reactors were not high except in a few villages in the Battumulla and Laggala Pallegama area in the Central Province and one village in the Polonnaruwa District.

TABLE III

DATA OBTAINED BY YAWS CONTROL WORK IN CEYLON DURING 1955–1959

Survey	Name of Area (Province)	Date	Total Population Examined	Total Estimated Census Population in Area	Average Coverage of Population (per cent.)	Total Persons Treated	Active Cases of Yaws Found			
							Infectious	Hyperkeratoses	Late Cases	Total
Initial Treatment	Central Province									
	Batumulla Area ..	May, 1955	5,879	6,229	94·4	5,879	3	8	17	28
	Laggala-Pallegama ..	July, 1955	7,837	8,715	89·9	7,837	—	6	9	15
	Matale East	1956	918	1,438	63·8	918	—	—	—	—
	Matale North ..	1956	3,166	8,125	38·9	3,166	—	—	—	—
	Ratnapura	1957	522	847	62·0	522	—	—	—	—
	Kurunegala	1957	182	469	38·8	182	—	—	—	—
	Polonnaruwa ..	1957	230	275	83·6	230	—	—	—	—
	Anuradhapura ..	1957	126	369	38·3	126	—	—	—	—
	Galle and Matara ..	Nov., 1957	20,414	45,258	45·1	20,178	—	23	—	23
	Puttalam District ..	1959	5,409	17,202	31·4	5,206	1	11	9	21
	Anuradhapura District	1959	8,255	14,567	56·7	7,229	13	31	9	53
	Polonnaruwa District ..	1959	1,490	2,380	62·6	885	2	5	5	12
	Kegalle District ..	1959	3,160*	2,866		2,784	—	—	1	1
	Badulla District ..	1959	7,256	14,631	49·6	5,739	2	10	8	20
	Ratnapura District ..	1959	8,479	17,986	47·1	8,852	1	14	9	24
	Total		73,323	141,357	51·9	69,733	22	108	67	197
Re-Survey	Batumulla	.. ..	104	3,942	2·6	104	—	—	—	—
	Laggala-Pallegama	.. ..	60	3,630	1·6	60	—	—	—	—
	Ranorewa	.. ..	176	918	19·2	176	—	—	—	—
	Total	.. ..	340	8,490	4·0	340	—	—	—	—

* A few people from other neighbouring villages also attended.

Table IV summarizes the results of the full surveys carried out during the years 1955–59 in the nine endemic areas. These figures show that yaws is no longer a serious problem in Ceylon, but one has to be alert to the possibility of sporadic cases occurring in the once endemic areas and to the possibility that a small epidemic may break out at any time, because of the various other environmental factors in the spread of the disease.

(2) In Unsurveyed Areas.—No cases have been reported from unsurveyed areas.

Epidemiological, Serological, and Treatment Studies in Special Groups or Areas

In Table V the percentage of sero-reactors according to age-group is compared with the percentage of all clinical lesions in each area. The Table shows that the sero-reactivity rate among those under 15 years of age is lower than that in the older age group. The analysis gives further evidence that yaws is no longer a serious problem in Ceylon.

TABLE V

PERCENTAGE SERO-REACTORS CLASSIFIED BY AGE GROUP IN TEN AREAS

Area	Sero-Reactivity (per cent.)			Clinical Lesions All types (per cent.)
	Under 15 years	Over 15 years	Total	
Batumulla ..	4·6	6·4	6	·005
Laggala-Pallegama	3·8	7·7	6·9	·002
Galle	1·6	5·9	4·6	·001
Matara	0·75	6·02	4·6	·001
Puttalam	0·4	4·9	3·2	·004
Anuradhapura ..	1·5	11·1	6·5	·006
Matale and Polonnaruwa	0·8	9·4	6·4	·008
Kegalle	—	2·2	1·5	·0003
Badulla	1·5	6·2	4·3	·002
Ratnapura ..	2·9	1·2	5·006	·002

Other Activities combined with Yaws Control

No other major activity was combined with the yaws surveys, but the treatment of malnutrition by the distribution of vitamin tablets and milk powder was undertaken by the staff, and other minor ailments were treated, those needing special care being referred to the appropriate institutions. Health education on general sanitation was also carried out daily by the staff in the evenings during the surveys.

Future Surveillance

All officers of the Health Department, particularly those working in areas once endemic for yaws, have been instructed to work in close collaboration with the Medical Officers in charge of the Outstation Venereal Disease Clinics which have been established in every province.

Literature on yaws has been distributed so that officers unfamiliar with the disease will be able to recognize it when a case presents itself. Wherever a case of infectious yaws is diagnosed, selective mass treatment will be carried out.

When the local staff are not adequate and are not in a position to take the necessary action to investigate and carry out a survey and treatment, additional staff are sent from the Central Organization in Colombo. The advice of the Superintendent, Anti-Venereal Disease Campaign, is available to the provincial Medical Officers.

Integration

Integration of yaws surveillance into the existing rural health service is not yet complete in any area. The work is done by the specialist in venereal diseases and yaws in each province. When a case is detected in a rural dispensary, he visits the area and plans the further investigation and selective mass treatment.

TABLE IV

SUMMARY OF RESULTS OF YAWS SURVEYS IN NINE S.H.S. DIVISIONS, 1955–1959

S.H.S. Division	Total Population of Area Covered	No. of Blood Samples Examined	Positive Reactors			
			Number		Percentage	
			Low 1 : 8 and below	High 1:16 and above	Low	High
Kandy	7,215	3,802	237	29	6·2	0·8
Matale	10,285	5,717	333	45	5·8	0·8
Galle	27,845	10,109	409	47	4·0	0·5
Matara	17,413	7,210	261	63	3·6	0·9
Puttalam	17,204	4,686	123	25	2·6	0·5
Anuradhapura	15,191	6,536	354	80	5·4	1·2
Badulla	14,631	5,702	188	60	3·3	1·1
Kegalle	2,866	2,655	29	10	1·1	0·4
Ratnapura	18,833	8,091	225	33	2·8	0·4

The chief obstacle to integration is the lack of knowledge about yaws of the junior officers in rural areas, who have not had the opportunity of seeing any cases of yaws during their training. However, instructions on yaws have been issued to all these officers, refresher courses and inservice training programmes have been arranged, and pictures of yaws lesions have been circulated among them. Medical students and other paramedical personnel are now given full instructions on yaws during their training.

Plans for the Yaws Campaign for the Next Five Years

Although, in view of the very low incidence, yaws is no longer a problem in Ceylon, a large reservoir of susceptibles has been built up during the last 25 years among the rural population. This, together with the expansion of transport facilities and the movement of population groups from urban to rural areas, affords an opportunity for the introduction and spread of syphilis in the villages. To prevent this possibility, the control of venereal diseases in the urban areas has been intensified since the beginning of 1960.

In addition to the nine existing full-time venereal disease clinics, action has been taken to train medical officers and public health inspectors to hold part-time venereal disease clinics at several outstations. This training programme will be continued until all such institutions are able to provide adequate facilities for venereal disease control.

The Venereal Disease Reference Laboratory Screen Test has been decentralized in four provincial laboratories: viz. Jaffna, Kandy, Kurunegala, and Ratnapura. All blood specimens from the respective health division are examined at the provincial laboratory under the supervision of the pathologist.

Summary

The relevant geographical features of Ceylon are described briefly.

The history of the attempts to control yaws in Ceylon, starting in 1886, is traced, and clinical and serological surveys made between 1955 and 1959 are reported. The results of these recent surveys confirm that yaws is no longer a problem in Ceylon.

Plans for further surveillance of previously endemic cases and the integration of this work with that of the rural health service are described. The need to prevent the spread of venereal syphilis in the susceptible populations of areas where yaws was previously endemic is emphasized and the training of personnel with this end in view is outlined.

Le contrôle du pian à Ceylan

RÉSUMÉ

On décrit brièvement les caractéristiques géographiques de Ceylan. On raconte l'histoire du contrôle du pian depuis 1866 et les examens cliniques et sérologiques pratiqués entre 1955 et 1959. Les résultats de ces inspections récentes montrent que le pian n'est guère un problème sanitaire en Ceylan. On décrit des projets pour la surveillance des régions où jusqu'alors le pian était endémique et pour l'intégration de ces projets avec le service sanitaire rural.

On souligne le besoin de prévenir la propagation de la syphilis vénérienne parmi les habitants susceptibles de ces régions et de former du personnel capable de réaliser ce but.